Hlavsová, L.: Branched oligoesters plasticized using methylsalicylate as carriers of drugs

Summary

The aim of this work was to study acyclovir release from plasticized oligoester matrices. Tested matrices are branched terpolymers of D,L-lactic acid, glycolic acid and mannitol or dipentaerythritol. Carriers were plasticized using 10%, 20% or 30% of methyl salicylate.

Theoretical part is concerned with synthesis, degradation and application of polyesters, drug release from polymers, infections caused by herpetic viruses and antivirotics. Within the experimental part of this work 150,0 mg matrices by method of melting of carriers together with plasticizer at temperature less than 80°C was prepared. In addition to matrices with drug the matrices without drug (placebo) were prepared. The static dissolution test was done using phosphate citric buffer pH 6,0 at temperature of 37°C. The absorbation of the dissolution liquid at given intervals was measured at wave length 256 nm against both the buffer and placebo dissolution liquid.

Drug release was influenced first of all by the properties of oligoester carrier, minor by plasticizer concentration in matrices. The elution of the methyl salicylate was arisen at the beginning of the dissolution, so there is no plasticizer in the system in the later phases of the dissolution and liberation is influenced only by the molar weight of the oligoester. The sufficient concentration of methyl salicylic used as plasticizer is 10%, in case of 3D carrier with the highest molar mass Mw = 5300 g/mol also 20% is feasible. It was found, that the best acyclovir release was from 3D carrier plasticized with 10% or 20% of methyl salicylate.